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ABSTRACT

At least 20 percent of students in the Baltimore City Public Schools and other large urban districts are "invisible dyslexics" (children whose academic futures are doomed because their problems in learning to read are diagnosed too late and treated too little or not diagnosed and treated at all). Delay in early diagnosis and treatment has disastrous academic consequences. Baltimore City's flawed system reflects another discrimination in diagnosing and treating early reading difficulties: under special education laws, children must present a large discrepancy between measured intelligence and reading achievement in order to be entitled to special instruction. Children with low IQ scores are much less likely to receive help for similar reading difficulties. This report, based on an analysis of research and practice literature on early reading difficulties and on interviews with researchers and practitioners, recommends specific steps to uproot and remedy this hidden discrimination against poor and minority children. It examines research that overturns long-held beliefs about the causes and cures of reading difficulties and highlights the reasons educators have been slow to respond to the new research consensus (e.g., lack of teacher training and awareness, low expectations, and lack of money for early intervention in impoverished districts). After summarizing the budding evidence on best practices in early identification and intervention beginning in kindergarten, the report illustrates the plight of invisible dyslexics and calls for national, state, and local action. (Contains 48 endnotes.) (SM)

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The Invisible Dyslexics: How Public School Systems In Baltimore and Elsewhere Discriminate Against Poor Children In the Diagnosis and Treatment of Early Reading Difficulties

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Executive Summary

I am invisible, understand, simply because people refuse to see me.
Ralph Ellison, *Invisible Man*

Our nation's general failure to diagnose and treat early reading difficulties is disproportionately harmful to poor and minority students. At least 20 percent of the children in Baltimore City public schools and other large urban districts can be called "invisible dyslexics." Though definitions of dyslexia vary, it is usually understood to mean difficulties in learning to read. "Invisible dyslexics" are children whose academic futures are doomed because their problems in learning to read are either diagnosed too late and treated too little, or not diagnosed or treated at all.

An unrecognized and hidden reason for this tragedy is discrimination based on IQ and family background. Under special education laws, children who experience early reading difficulties are not entitled to special instruction unless there is a large discrepancy between intelligence measured by IQ tests and reading achievement. This "discrepancy requirement" has a perverse impact: high-IQ children with reading difficulties have larger discrepancies, and therefore receive earlier and more intense supplemental instruction than low-IQ children with similar reading difficulties who are more in need of help. Moreover, IQ scores underestimate the learning potential of children from low-income, language-poor homes.

The delay in early diagnosis and treatment has disastrous academic consequences. Many students with mild or severe reading difficulties will require supplemental instruction throughout their K-12 schooling. Yet research shows that for almost all of them reading by first grade (or "reading by seven") is a make-or-break turning point. Children who fall behind early rarely catch up.

Last year only three Baltimore City children were eligible under the special education "specific learning disability" (LD) classification at ages 3 to 5 and very few in first and second grades. The number of LD children soars in higher grades, but by then students have suffered several years of failure. Remedial instruction at that point is notoriously ineffective. Undiagnosed early reading difficulties rapidly metastasize into academic deficits and disruptive and self-destructive behaviors that special education is powerless to cure.

This flawed system reflects another kind of discrimination in the diagnosis and treatment of early reading difficulties: low teacher expectations of low-IQ, low-income students. Early reading difficulties are often blamed on the child and family, rather than on the school's failure to deliver the right kind of reading instruction.

Both forms of discrimination – low teacher expectations and the bias against low- IQ children in the discrepancy requirement for special education services – have been

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exposed by what a leading neuroscientist calls "a revolution in what we've learned about reading and dyslexia."[1]

Reading scientists have reached agreement that:

- Most reading difficulties including dyslexia are caused by core deficits in phonological awareness (children cannot make enough connections between spoken sounds and words and written letters and words, blocking their ability to master the foundational reading skills of decoding and word recognition).
- Such deficits in phonological awareness are found among children with low as well as high IQs.
- The deficits can usually be identified as early as pre-kindergarten or kindergarten and effectively treated.

These findings have profound implications. They discredit the conventional educational wisdom that early reading difficulties including dyslexia are rare and mysterious disorders found predominantly in the IQ elite. Most important, they show that school officials must raise their expectations for what low-IQ, low-income children can achieve, and be held more accountable for providing virtually all students with the phonological awareness and other basic skills that are the foundation for learning to read.

This report recommends specific steps to uproot and remedy this hidden discrimination against poor and minority children. First and foremost, the right to early diagnosis and treatment of reading difficulties must be recognized and pursued with the urgency and moral clarity of civil rights causes of the past. The struggle must assure, as early as pre-kindergarten, that children do not fall behind in achieving developmentally appropriate reading milestones. Students at risk or experiencing difficulties must be screened, taught using research-proven reading programs, assessed frequently, and provided with intensive supplemental instruction as needed. There must be "zero tolerance" for early reading deficits. And the Baltimore City Public School System has an opportunity to play a trail-blazing role.

The report is based on an analysis of the research and practice literature on early reading difficulties and many interviews with researchers and practitioners. Section I examines the research that overturns long-held beliefs about the causes and cures of reading difficulties, including dyslexia. Reading scientists and other experts believe it is time to redefine reading disabilities to focus on core deficits in phonological awareness and eliminate the requirement of a discrepancy between IQ and achievement.

Section II highlights the reasons educators have been slow to respond to the new research consensus. Teachers in both regular and special education have little train-

ing in how to teach children with reading difficulties, and therefore harbor low expectations for low-IQ, low-income students. Also, money for early interventions is lacking in impoverished school districts like Baltimore. And low-income parents of children with reading disabilities lack advocacy know-how and clout. Suburban school districts also fall short on diagnosis and treatment. Still, upper-income parents have greater wherewithal to force public schools to provide extra instruction or to bypass public schools and enroll their children in one of the expensive, rapidly growing private schools for students typically described as bright and dyslexic. So poor children in poor urban schools suffer the most. As the saying goes, when the nation catches cold, the poor get pneumonia.

Section III summarizes the budding evidence of best practices in early identification and intervention beginning in pre-kindergarten. Researchers recommend a framework in which diagnosis and treatment are not limited by the fragmented, restrictive eligibility requirements and funding streams of current categorical programs such as special education and federal Title I compensatory aid. Rather, children who do not respond to regular classroom instruction must be eligible for additional services based solely on instructional needs.

As detailed in Section IV, the Baltimore City Public School System (BCPSS) illustrates the nationwide plight of "invisible dyslexics." On the one hand, BCPSS has become a national leader in efforts to improve reading in the early grades. Test scores have risen dramatically. On the other hand, about half of all children in grades one through three are not achieving at grade level. Little is done early to diagnose and treat individual reading deficits. Based on emerging evidence of best practices, BCPSS must provide earlier and more detailed screening and assessment and increase individual interventions such as small group and tutoring instruction.

National research provides guidelines for these steps but not a complete road map. Section V conceptualizes a pilot project of national significance that would deepen the knowledge base about individual needs of struggling students and what interventions work best. The project would go beyond current demonstration projects by starting in pre-kindergarten and providing students with graduated interventions – especially small group instruction and tutoring delivered by a reading specialist – to enable virtually every child to acquire the foundational skills for reading success.

Section VI calls for national as well as state and local action. The federal government, as in civil rights movements of the past, should play a leading role. The U.S. Department of Education is working commendably with research scientists, but more should be done to educate educators and policymakers, to boost funding and to revamp federal laws that impede early identification and intervention.

The obstacles are formidable. But they pale in contrast to the tens of thousands of poor and minority children in Baltimore City and the millions across the country who will remain permanently left behind if their early reading difficulties are not diagnosed and treated. This invisible injustice can be overcome by concerted federal, state and local action. Only then will our nation fulfill the right of every child to a secure foothold on the ladder to academic success.

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Preface/Acknowledgments

This report is an outgrowth of the findings and analyses in my report, "Still Getting It Wrong: The Continuing Failure of Special Education in the Baltimore City Public Schools," published in 2002 by The Abell Foundation. The earlier report documented how the Baltimore City school system is obsessed with procedural compliance at the expense of better instruction. Judging from responses, the report struck a chord. I hope it has been helpful to the growing national chorus of policymakers and educators who appear ready, at long last, to admit the disastrous failure of special education services for most mildly disabled students.

This report seeks to pick up where that one left off. If the focus were changed from compliance to instruction, what specific policy steps should be recommended? It quickly became clear to me that all research roads lead to the paramount need for early identification and intervention to prevent and remedy reading difficulties. Special education services for children with mild learning problems are too little, too late. Undiagnosed early reading difficulties rapidly metastasize into academic deficits and disruptive and self-destructive behaviors that special education is powerless to cure.

In many respects, the nation is moving towards the goal of teaching all young children to read. President George W. Bush's Reading First and Early Reading First initiatives provide national leadership (though scant resources). Most states and cities — probably none more so than Baltimore City— have stepped up their preschool and kindergarten-through-grade-three early reading programs.

Yet these efforts may already be leveling off, as they are in the Baltimore City schools. Even when strong early reading programs and practices are put in place, too many children remain left behind. There are many reasons why this is so, and many additional reforms to be undertaken, as this report details.

At the same time, one insidious aspect of the problem requires special attention. It is no secret that poor and minority children suffer generally from inequality of educational opportunity. But a particular strain of discrimination has gone virtually unnoticed. Discrimination based on IQ and family background impedes the diagnosis and treatment of early reading difficulties. The report reveals how special education laws and low teacher expectations prevent low-IQ, low-income children from acquiring the basic skills for early reading proficiency.

In conducting research and policy analyses, I have received invaluable assistance and encouragement from numerous administrators, teachers, psychologists, social workers and speech and language pathologists in the Baltimore City public schools. The more I learn about the day-in, day-out work of city educators, the more I admire their knowledge and dedication, and the more determined I am to give voice to their concerns. However, as in my earlier report, I have not identified these educators by name because top city school officials continue to restrict open discussion.

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In addition, I have gotten generous help from outside experts. Some patiently tutored me in trying to make sense of the confusion and misunderstandings that surround early reading difficulties including dyslexia. Some provided advice and commented on one or more drafts of the report. The researchers to whom I am especially indebted include Linda Baker, University of Maryland, Baltimore County; Michael Coyne, University of Connecticut; Laurie E. Cutting, Kennedy Krieger Institute and Johns Hopkins University; Douglas Fuchs, Peabody College, Vanderbilt University; and Barbara A. Wasik, Johns Hopkins University Center for Social Organization of Schools. Several outstanding practitioners in the Baltimore region who evaluate and tutor children with reading difficulties were also of great assistance, among them Ann M. Bain, Sheppard Pratt Health System; Fran Levin Bowman, Bowman Educational Services; and Regina L. Cicci, University of Maryland School of Medicine.

Most of all, I thank The Abell Foundation for its continued support. Feedback from readers is welcome in care of the Foundation, or to me directly at khettlem@erols.com.

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I. From Evolution to Revolution in Defining Learning Disabilities Including Dyslexia

A. Confusion and popular misunderstanding

From its "discovery" over a century ago, the definition of dyslexia has been mired in misunderstandings and controversy. Dyslexia scholar Margaret J. Snowling observes, "Dyslexia has, throughout its history, defied definition."[2] G. Reid Lyon, Chief of the Child Development and Behavior Branch at the National Institute of Child Health and Human Development of the National Institutes of Health and the pre-eminent leader of the movement to reform early reading programs, writes: "Despite the significant role that a definition should play in scientific and clinical understanding of dyslexia, the field has constructed numerous vague, ambiguous, and nonvalidated descriptions of the disorder."[3]

The confusion is not surprising given scientific uncertainty over the "precise nature of reading acquisition" and the perpetual reading wars between phonics and whole language teaching methods.[4] Nonetheless, dyslexia has tended to be broadly understood as any serious problem of faulty reading or any kind of reading disability characterized by a discrepancy between intelligence and achievement.[5] As such, it has been widely perceived by practitioners and parents as a mysterious disorder – probably faulty wiring in the brain – that causes otherwise bright children to experience significant learning problems, especially in reading.[6]

This popular perception persists, as illustrated in a recent, well-publicized article in Fortune magazine. The article profiled dyslexic "dead-end" kids in reading who became billionaire CEOs or attained other professional fame.[7] But the conventional portrayal of persons with dyslexia as having superior intelligence and unusual talents is misleading. As leading neuroscientist and reading researcher Sally Shaywitz points out, "there's been a revolution in what we've learned about reading and dyslexia."[8] Reading scientists have removed a lot of the mystery and elitism from the diagnosis and treatment of dyslexia. For example, Shaywitz dismisses the "myth" that backwards writing and reversals of letters and words are distinguishing markers of dyslexia.[9] Rather, researchers have found, as discussed in detail later, that core deficits in phonological processing, primarily phonological awareness, are mainly responsible for difficulties many children diagnosed with dyslexia, and many others not diagnosed, face in mastering the foundational skills for reading.[10]

Lyon concedes that the science of the causes and cures of reading difficulties remains a work in progress.[11] Still, enough is known to shake the foundation of current practice and to hold educators more responsible for prevention and remediation of reading difficulties, whether called dyslexia or not.[12] Reading scientists are confident that

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deficits in phonological awareness – the gateway barrier to learning to read – can be identified as early as pre-kindergarten, and usually overcome by adequate instruction, regardless of IQ (if above the level of retardation) and family background.

B. The failure to diagnose early reading difficulties under special education law

Early reading difficulties including dyslexia have been hidden from view by the faulty architecture of the Specific Learning Disability (LD) eligibility classification under the federal Individuals With Disabilities Education Act.[13] The Code of Maryland Regulations, which mirrors federal law, defines LD as "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations." It includes "conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia [emphasis supplied], and developmental aphasia." The key test is a "severe discrepancy between achievement and intellectual ability" that is not "primarily the result of visual, hearing, or motor impairments, mental retardation, emotional disturbance, or environmental, cultural, or economic disadvantages."[14]

However, the disorder of LD and the condition of dyslexia are not further defined under federal or state law. This means, notes Lyon, that the definition of LD, including dyslexia, is "exclusionary." It tells what LD/dyslexia is not, but not what it is. It fails "to provide objective guidelines and criteria for distinguishing individuals with dyslexia from those with other primary handicaps or generalized learning difficulties."[15]

Worse, the discrepancy requirement means the reading problems of many urban children are diagnosed too late or not diagnosed at all. Lyon quotes an indictment of current practice: "A negative [exclusionary] definition of this kind not only fails to aid conceptual clarity, but also implies that dyslexia cannot be diagnosed in a child in a poor or unconventional background.[16]

As a result, dyslexia becomes a near-invisible disability in large urban school systems like BCPSS. Early reading problems are too often blamed on weaknesses in intelligence or family background rather than specific deficits like phonological processing, which school systems can prevent and remediate. Low expectations of low-income children with low IQs are reinforced.

While, as discussed later, many children are eventually diagnosed as LD, most are not found eligible for special education services until the fourth grade or later. At that point, their eligibility is based less on the diagnosis of a disability and more on the

pragmatic grounds that they are several years below grade level and cause instructional and often behavior problems for the regular classroom teacher. But by then, special education treatment is too little, too late.[17]

Recently however, reading researchers have set in motion a groundswell for reform.

C. The new research consensus

Reading scientists call for redefining reading disabilities under LD, including dyslexia. The redefinition focuses on core deficits in phonological awareness and eliminates the invalidity and discriminatory impact of the IQ/achievement discrepancy requirement. Reading difficulties should be diagnosed and treated as mild or severe learning problems at the lower end of a normal distribution of reading ability among all children.[18]

Core deficits in phonological awareness

Reading scientists have accumulated a wealth of evidence that deficits in phonological awareness – the key component of phonological processing – are the main cause of early reading difficulties that block the pathway to reading fluency and comprehension. [19]

Phonological awareness is broader than phonemic awareness, though the terms are sometimes used interchangeably. As clarified by the national Partnership for Reading: "Phonemic awareness is a subcategory of phonological awareness. The focus of phonemic awareness is narrow – identifying and manipulating the individual sounds in words. The focus of phonological awareness is much broader. It includes identifying and manipulating larger parts of spoken language, such as words, syllables . . . as well as phonemes. It also encompasses awareness of other aspects of sound, such as rhyming, alliteration, and intonation."[20]

To add to the confusion, neither phonemic awareness nor phonological awareness is the same as phonics. Phonics comes later in the process of learning to read, and moves the emerging reader from sounds to written language. It generally embraces instruction in decoding and identifying written words that are familiar and unfamiliar. In turn, phonics-based decoding and word recognition are the threshold reading skills on the path to fluency and comprehension.[21]

The early stumbling block is that attaining phonological awareness is "difficult for most children and far more difficult for some than others."[22] Still, as discussed later, research-proven assessment and instruction, as early as pre-kindergarten, can usually overcome the difficulties.

Invalidity and discriminatory impact of the IQ/achievement discrepancy requirement

Evidence that phonological awareness is the core deficit in early reading difficulties has gone hand in hand with another, even more radical, departure in how scientists define and diagnose reading disabilities including dyslexia. Reading researchers strongly reject the IQ/achievement discrepancy requirement as a valid criterion for assessing the need for early intervention.

Rejection of the discrepancy requirement extends beyond familiar criticisms that IQ tests are culturally biased and frequently fail to capture the capabilities of children from language-poor families.[23] Recent studies, eminent researcher Joseph K. Torgesen writes, have "led to the discovery that the early word reading difficulties of children with relatively low general intelligence and verbal ability are associated with the same factors (weaknesses in phonological processing) that interfere with early reading growth in children who have general intelligence in the normal range."[24] In other words, children with low IQs generally experience early reading difficulties for the same basic reasons as children with high IQs.

The discrepancy requirement is not just bad science. It perversely results in high-IQ children with reading difficulties receiving more extra instruction than low-IQ children. The National Research Council Committee on the Prevention of Reading Difficulties in Young Children observes: "For example, a child with a standard reading score of 75 and an IQ of 90 is likely to show similar benefits from remedial instruction when compared with a child who has a reading score of 75 and an IQ of 100, but only the latter child would have a sufficient aptitude-achievement discrepancy to be eligible for special education services in most states."[25]

Maryland is one of these states. And the children who suffer the most are concentrated in urban school districts like Baltimore City where students in the early grades rarely have sufficiently large intelligence/achievement discrepancies to meet the special education eligibility requirements. In Baltimore City, about 6 percent of all students are eventually found eligible for LD special education services. But the great majority of them do not receive the services until after the third grade when their eligibility is based less on the diagnosis of a disability and more, pragmatically, on their impact on the regular classroom.[26] They are typically several years behind grade level and continuing to fall further behind. Their instructional needs cannot be met by the already overburdened classroom teacher, and their academic frustrations often result in disruptive classroom behaviors.

These children are the "invisible dyslexics" who do not receive instructional assistance until it is too little, too late. The "wait to fail" syndrome prevails, and the lost academic ground is almost never recovered.[27]

The invalidity of the discrepancy requirement does not mean that intelligence is immaterial. Intelligence is a factor as students with (and without) phonological awareness difficulties labor up the ladder of reading competencies.[28] Still, the ascendant reading research shows that low-IQ children can acquire the necessary foundational reading skills if they get adequate early assistance. It is a national tragedy that so many urban children with low IQs as well as other socioeconomic burdens are not getting that assistance.

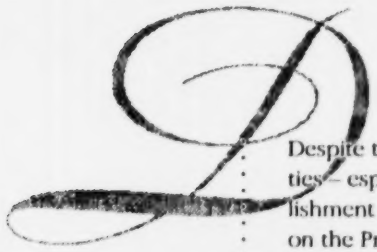
The prevalence of mild or severe reading difficulties

The scientific findings related to phonological awareness and the invalidity of the discrepancy requirement challenge the traditional view that reading disabilities, including dyslexia, are a discrete disorder that can be determined based on a cut-off statistical measure. Rather, under what the Committee on Preventing Reading Difficulties in Young Children calls the "dimensional approach," reading difficulties are seen as the lower end of a normal distribution of reading ability among all children. The Committee found that "deciding on the precise point on the [distribution] at which to distinguish normal reading from reading disability is quite arbitrary .... For instance, children who do not quite meet the arbitrary cutoff score [for the discrepancy requirement for LD] have very similar abilities and needs as those of children whose reading levels are just on the other side of the cut-point."[29]

Experts vary widely in their estimates of the number of children who are at mild or severe risk along the distribution scale. Several suggest about 20 percent.[30] Other estimates are as high as 50 percent.[31] A key variable is the quality of early reading instruction. For example, Torgesen observes that 30 percent to 60 percent of children frequently fall below a reasonable standard for reading progress, but effective instruction can reduce the failure rate to approximately 2 to 6 percent.[32]

In effect, the mild-to-severe dimensional view of reading difficulties including dyslexia brings the definition of dyslexia partially full circle. Dyslexia – defined primarily in terms of core deficits in phonological processing – remains relatively synonymous with most reading difficulties. The difference in the new definitional approach is that it does not require an intelligence-achievement discrepancy.

II. The Education Establishment's Slow Learning Curve



Despite the needless learning failure suffered by children with early reading difficulties – especially students with low IQs in urban school districts – the education establishment has been slow to respond to the new research consensus. The Committee on the Prevention of Reading Difficulties in Young Children points out that the dimensional approach to individual differences in reading achievement "has been embraced by most researchers, although not yet by a majority of educators."[33]

Educators tend to lag in taking action to reform early diagnosis and treatment for many reasons:

- Most of all, lack of teacher training. General education and special education teachers are poorly trained in basic reading instruction and have virtually no knowledge about how to diagnose and teach children with reading difficulties.[34]

- Fallout from the education wars over what is "developmentally appropriate" and how to teach reading. Many teachers resist early identification and intervention because they believe – contrary to recent research – that most emerging readers in the early grades are developing at their own pace and will grow out of their reading difficulties.[35] Furthermore, treatment of early reading problems, as discussed later, is tied more closely to systematic, direct "phonics" than the "whole language" instructional approach that holds sway among many teachers and university schools of education.

- Low teacher expectations. As mentioned earlier, inner city students are saddled from the start by the common, erroneous belief among educators and the public that they cannot achieve high academic standards. This misunderstanding reflects the misguided conventional wisdom that reading disabilities are largely confined to bright non-achievers.

- Lack of funding. Effective early treatment, as detailed later, is expensive in the short run. Over time, it will reduce the skyrocketing costs of special education as well as the other economic and social costs of school dropouts and other poorly educated citizens.

- Low-income parents' lack of advocacy know-how and clout. Most parents in urban school districts do not understand how to seek additional instruction for their children and cannot afford a lawyer to assert their rights. Thus, public and private programs to treat reading disabilities are almost exclusively within the province of upper-income families and communities.

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III. General Principles For Early Identification and Intervention

This section covers the key principles and best practices for early identification and intervention after children enter school in pre-kindergarten or kindergarten. Of course, prevention of reading and other school difficulties should begin well before then. Early childhood programs – spanning "zero to three," the Infants and Toddlers program, family support centers, child care, Head Start and other preschool activities – are crucial in preparing children to meet developmentally appropriate reading benchmarks beginning in pre-kindergarten. A journalist summed up last year's White House summit conference on early childhood cognitive development: "The unanimous verdict: It's never too early. Even the womb isn't out of bounds."[36]

After students enter the schoolhouse, what steps should BCPSS and other school districts take to diagnose and treat early reading difficulties?

Researchers recommend a basic framework in which diagnosis and treatment of early reading difficulties should not be limited and fragmented by categorical education mandates and funding streams such as special education, federal Title I and other compensatory aid. Instead, a child who has not responded to regular classroom instruction must receive additional treatment tailored to the nature and severity of the child's individual reading difficulties, regardless of categorical eligibility.[37] (As noted later, while federal special education laws require revision, local school districts now have more flexibility than is commonly recognized to work with or around current federal regulations in order to strengthen early diagnosis and treatment.)

The main elements in the early identification and intervention process are screening and assessment, multidisciplinary problem-solving teams, and system-wide and student-level (individual) interventions.

A. Early identification: screening and assessment

There is growing recognition that the screening and assessment process should start in pre-kindergarten. Two National Research Council studies highlight developmentally appropriate identification and intervention practices for four-year-olds.[38] Newsweek magazine reports, "Following the example of Texas, a number of states are ... considering screening preschoolers and kindergartners for early signs of dyslexia so problems can be treated early."[39] The Bush administration recently announced its intent to mandate standardized tests measuring reading readiness for all four-year-olds in Head Start.[40] At the same time, many experts caution against premature judgments about the learning ability of children and the imposition of diagnostic labels at such a young age.[41]

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Reading researchers appear unanimous, however, that diagnosis and treatment should begin no later than kindergarten. The Committee on Preventing Reading Difficulties in Young Children found: "Kindergarten screening ... has become reasonably accurate when a combination of skills is measured (although the optimal combination is not yet identified)."[42] Lyon writes: "Phonemic awareness skills assessed in kindergarten and first grade serve as potent predictors of difficulties learning to read. With a test that takes only 15 minutes to administer, we have learned how to measure phonemic awareness skills as early as the beginning of kindergarten, and over the past decade we have refined these tasks so that we can predict with approximately 92 percent accuracy who will have difficulties learning to read."[43]

Screening and classroom assessments, including measurements of skills and teacher observations, should be conducted frequently. Reading difficulties change over the course of developmental milestones and the different stages of reading from readiness through comprehension. Where appropriate, children with high risk factors and/or early deficits should receive more diagnostic cognitive, educational, psychosocial, speech and language and other evaluations.[44]

B. Multidisciplinary problem-solving teams

Multidisciplinary problem-solving teams, at the school-wide or grade level, such as the Student Support Teams as they are called in Baltimore City, are usually a bridge between early identification and intensive interventions. Though engineered primarily as a safety valve to stem the flow of referrals to special education, they should serve a broader purpose.[45]

The teams generally receive referrals from teachers, but others – including parents and other school personnel – should also refer. The nucleus of the team usually includes the classroom teacher, a reading specialist (if available), a psychologist and perhaps a speech and language pathologist or social worker. In theory, the teams diagnose academic and behavior problems and prescribe and monitor interventions. The interventions can range from advice to the teacher about relatively modest classroom adjustments in instruction and behavior management to sophisticated individual reading plans that include small group instruction and tutoring. The teams can also spur thorough evaluations. But in practice, implementation is severely constrained by lack of resources and varies enormously from student to student, school to school and district to district. Because of so many variations, there is little generalizable evidence of effectiveness.[46]

C. Early interventions

Early intervention includes system-wide and student-level interventions. System-wide interventions are the instructional elements needed for almost all schools and students in districts like Baltimore City that have a large percentage of students who are at risk of not meeting performance standards. System-wide interventions include core reading programs that adhere to the reading research, pre-kindergarten and all-day kindergarten programs, classroom-based teacher training and small class size. They are largely preventive, and can minimize the necessity of supplemental student-level interventions.

Student-level interventions provide additional preventive or remedial assistance to students who are individually identified as at particular risk of not meeting standards, or who have not met standards. Student-level interventions typically begin, following screening and teacher observations, with teachers obtaining advice from classroom coaches and problem-solving teams. However, additional instruction through small groups and tutoring during the school year and the summer is almost always needed.

For the most part, this report focuses on such student-level interventions. But the prevention and remediation of early reading difficulties depend on the quality and intensity of instruction in both the system-wide core reading program for the whole class as well as supplemental instruction for individual students. (The line between them is difficult to draw, particularly with respect to small group instruction.)

As a general rule, core instruction for children with reading difficulties does not differ from core instruction for other early readers.[47] The bedrock is systematic, direct instruction in phonological awareness and phonics as prescribed by the National Reading Panel (convened by the National Institute of Child Health and Human Development and the U.S. Secretary of Education at the request of Congress) and other research studies. Also required are early language and vocabulary development and meaningful exposure to literature and pathways to comprehension.[48] This much is fairly clear.

However, many students will require additional help, and the research so far is unclear about the exact amount of time needed and the relative effectiveness of different intervention models.[49] Torgesen writes, "to know what kind of instruction is most effective is not the same thing as knowing how much of that instruction, delivered under what conditions, will lead to adequate development of word reading and passage comprehension skills in children with phonological processing weaknesses."[50]

A particularly vexing unknown is whether the additional time spent in small groups and tutoring should be more repetition of the core instruction, or more of a different instructional method, or a mix of both. As noted, students with early reading difficul-

ties do not typically need qualitatively different instruction than other students. But an undetermined number of students will. Researchers at the University of Oregon put it: "Can the core commercial program be used, but in smaller groups? Will the student benefit from an extra period of instruction, but with a different program?"[51] Advocates of strong phonics programs like Direct Instruction and Open Court tend to believe constant practice that reinforces the regular classroom instruction is usually sufficient. On the other hand, advocates of programs like Project Read, Orton-Gillingham and Lindamood-Bell believe that "multi-sensory" teaching approaches are essential, either standing alone or as a more prominent part of core and supplemental instruction.[52]

Probing this issue is one of the purposes of the pilot project proposed later in this report. Suffice it to say at this juncture, "students with mild difficulties will require more time and practice to achieve mastery, and those with more severe difficulties will require more specialized and intensive instruction."[53]

IV. Baltimore City Public Schools' Failure to Diagnose and Treat Early Reading Difficulties

Using Baltimore City as an example of urban districts across the country, how well does the public school system (BCPSS) measure up to the general principles for early identification and intervention? Overall, BCPSS is a national leader in efforts to promote early literacy, particularly with system-wide interventions. But it falls far short on student-level interventions: i.e., on individualized diagnosis and treatment of early reading difficulties. There are important lessons to be learned from the BCPSS experience, and this section includes specific recommendations for further reforms.

A. System-wide interventions

The emphasis in this report on student-level interventions is not intended to minimize the importance of strengthening the system-wide instructional base in the early grades (pre-kindergarten through second grade). BCPSS has made notable progress. The pre-kindergarten program has a strong early literacy component. The core reading program in kindergarten through second grade is either Open Court or Direct Instruction; each is supported by research. The expansion of all-day kindergarten to all schools allows additional time for reading instruction, and each kindergarten teacher has an aide. Class size has been reduced in first and second grades. Reading coaches are in all schools. As part of a bold and promising policy to end "social promotions," first and second grade students who do not meet promotion standards are required to attend summer school.[54] Early reading test scores have climbed.[55]

Still, as research and practice literature indicate, further system-wide steps must be taken:

- To reduce student-teacher ratio in kindergarten and further reduce it in grades 1 and 2 to 15:1.
- To provide summer school for at-risk or struggling students after pre-kindergarten and kindergarten.
- To provide more teacher training in reading, especially sufficient classroom coaching in pre-kindergarten and kindergarten.
- To give multidisciplinary problem-solving teams (Student Support Teams) the resources to develop and implement individual assistance plans.
- To develop non-graded or "transitional" programs, similar to those prevalent in many private schools, for kindergarten and first grade students who are not meeting developmentally appropriate standards.
- To monitor and conduct process evaluations to determine whether reading programs are faithfully and effectively implemented.
- To create a central office of early reading with the capacity to carry out ongoing curriculum development, training, technical assistance, monitoring and evaluation design.

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These recommendations are discussed in more detail in other analyses of BCPSS's early literacy initiatives.[56]

B. Student-level early identification and intervention

Current efforts

Efforts at early identification and intervention have been more procedural form than instructional substance, beginning with assessment and screening. An assessment instrument known as the Work Sampling System (WSS) is used in pre-kindergarten and kindergarten to "document and assess children's skills, knowledge, behavior, and accomplishments" across many domains. Teachers observe and score children on the indicators three times during the year. Still, the screening is based solely on observation by teachers with little training in diagnosis and treatment; only a small number of the overall indicators pertain to language and literacy; and there is little follow-up instruction based on the screening.[57]

In addition to mandating the WSS in kindergarten, the State mandates the Early Identification and Intervention program (EIIP) in kindergarten.[58] EIIP requires teachers to refer students with learning difficulties to a multi-disciplinary problem-solving team designed to assist the teacher and provide a range of interventions.[59]

In BCPSS kindergarten, the WSS serves as the observation tool under the EIIP, and Student Support Teams (SSTs) are the problem-solving teams. BCPSS has made excellent, nationally recognized attempts to develop SSTs for all grades, and some schools have implemented them well. But by and large, they are woefully overworked and under-funded; they rarely include reading specialists; and their effectiveness is exaggerated by BCPSS.[60] Worse, the SSTs are barely used for kindergarten and even less for pre-kindergarten children. The problem is not just lack of money; teachers are reluctant to make referrals because they lack knowledge and training in developmentally appropriate benchmarks of progress.

For similar reasons, plus the early absence of an intelligence-achievement discrepancy, pre-kindergarten and kindergarten students are almost never referred to special education Individual Education Plan (IEP) teams for diagnosis and treatment of reading disabilities. According to state data, only three BCPSS children were eligible last year for LD services at ages 3-5 and very few in first and second grades. As discussed earlier, the numbers soar in higher grades when intervention is almost always too little, too late.[61]

Interviews conducted for this report reveal that BCPSS does not diagnose and treat dyslexia, however defined, as a separate condition under the LD classification. BCPSS

administrators, general and special education teachers, psychologists, social workers and speech/language pathologists say, in effect: We don't separately test for dyslexia because it's covered generally under LD. And it wouldn't make any difference if we did. The students would get the same IEP.[62] For the future, if LD including dyslexia was redefined to focus on core deficits in phonological awareness and to eliminate the intelligence/achievement discrepancy requirement, dyslexia would largely disappear as a discrete condition. Instead, its causes and symptoms would be diagnosed and treated based on the "response to treatment" model described earlier. In other words, BCPSS would not be found wanting because it failed to diagnose and treat dyslexia, but because it failed to intervene as early as pre-kindergarten to prevent or remediate all reading difficulties, regardless of label.

Student-level recommendations

BCPSS should bring its policies and practices closer to the general principles (set forth in the prior section of this report) for timely, effective student-level early identification and intervention.[63] A model system will be expensive, and incremental implementation is unavoidable. But the following steps are necessary if students with early reading difficulties are to achieve early milestones.

- More intensive individualized screenings and assessments should begin in pre-kindergarten, with teachers trained to implement and analyze them.
- The EIIP/Student Support Team process should be extended to pre-kindergarten as, according to the Maryland Department of Education, several county school districts are doing.
- The EIIP/Student Support Teams should be supported with adequate resources, including case management, behavioral and family interventions as needed, and especially additional instructional assistance such as small groups and tutoring primarily during the school day.
- At-risk and struggling pre-kindergarten and kindergarten students should be provided developmentally appropriate summer and perhaps transitional (for example, "pre-first") programs; and retained first and second grade students should receive especially intensive additional help to enable them catch up to grade level.
- In the absence of treatment resources outside of the special education system, BCPSS should encourage "professional judgment" by teachers, psychologists and speech and language pathologists in the LD eligibility process so that more children with early reading difficulties will receive instructional assistance.[64] This "last resort" expansion of special education poses policy dilemmas as discussed later in the paper.

Scarce funds are, of course, an issue. At the same time, the BCPSS $363 million "Remedy Plan" for FY 2003 that sets forth multi-year funding priorities almost totally neglects the above interventions, and should be revised.

V. Preliminary Ideas For A Pilot Project

Although the principles that underlie best practices for diagnosis and treatment of early reading difficulties can be confidently stated, few studies to date offer a detailed road map for how to get almost all "at risk" students to early mastery of foundational skills. Past and current demonstration projects across the country may not sufficiently address two vital issues.

First, what are the benefits of starting early identification and intervention initiatives in pre-kindergarten? Disagreements over developmental appropriateness and cost-benefits discourage pilot projects for four-year-olds, and most studies begin in kindergarten. Second, exactly what individualized interventions are necessary to enable each child to overcome early risks and difficulties? Particularly, what small-group instruction and tutoring – with what content, duration and intensity – does it take? This approach would be different from the relatively fixed structure and capped level of interventions found in the small number of research studies on point.[65]

These studies may be constrained by funding limits and the desire to minimize operational and research variables. Moreover, Torgesen believes that the number of children with early reading problems can be substantially reduced to "approximately 2% to 6%" by applying "the best of what we know right now about reading instruction."[66] Still, valuable knowledge might be gained from a pilot project in an urban school system like Baltimore City's that starts in pre-kindergarten and provides students with more individualized, intense small group instruction and tutoring as needed.

The preliminary ideas that follow are intended to stimulate further planning.

1. The focus in a BCPSS pilot project should be on supplemental student-level interventions compared to system-wide or school-wide core reading programs. Other studies across the country tend to concentrate initially on steps to assure a research-based core reading program and/or to test alternative core instructional approaches. That starting point makes sense where school districts do not have solid system-wide core reading programs in place. But BCPSS, as detailed earlier, has significantly implemented research-prescribed early reading instruction in pre-kindergarten through second grade. Therefore, BCPSS is in the favorable position of being able to devote its attention to supplemental individual interventions in such a pilot project.[67]

2. Students who do not respond to treatment (i.e., the core reading program and initial interventions) should receive further individualized, graduated doses of supplemental small group instruction and tutoring as needed until they achieve developmentally appropriate benchmarks. The project should have a "zero tolerance for losing children instructionally."[68]

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3. The individual reading interventions would be principally directed and delivered by an experienced reading specialist. The reading specialist should assist classroom teachers to give and interpret screening and assessment measures, consult with the teachers on strategies for individual students, and directly provide all or most supplemental small group and tutoring instruction. The average classroom teacher or reading coach in BCPSS schools – even with better training – will not have the time or experience in the near future to perform these demanding tasks. True, finding experienced reading specialists is hard at almost any price, and any model based on using them will be difficult to replicate on a large scale. Still, the project will better probe the needs of slow-to-respond students if reading specialists, in tandem with classroom teachers, play a leading role.[69]

4. The grade span for the pilot project might extend from pre-kindergarten through first or second grade. Exact progression of students through the pre-reading and reading skills of letter identification, phonemic awareness, phonics, fluency and comprehension will vary. Students with mild and severe reading difficulties including dyslexia will often require some assistance throughout their K-12 schooling. Yet, as previously discussed, little doubt exists that for most disadvantaged students, particularly those with early reading difficulties, first grade, or "reading by seven," is a make-or-break turning point.

5. The project design should include a strong research component. Because of the numerous variables in student difficulties and interventions, case (ethnographic) studies of individual children would be desirable along with implementation and outcome analyses.

All these factors must be taken into account in determining the number of children, cohorts and schools in the pilot project. Another daunting factor is the frequency with which low-income students transfer among schools. In any event, a pilot project as conceptualized above would be expensive.[70]

VI. Equal Opportunity For Invisible Dyslexics: A Concluding Call To Action

This report has tried to shed light on how our nation's failure to diagnose and treat early reading difficulties including dyslexia disproportionately harms "invisible dyslexics" – that is, poor and minority students with early reading difficulties for whom early identification and intervention are almost always too little, too late.

The echo of civil rights causes of the past should be heard. Poor children not only suffer from general inequality of educational opportunity. Many of them, concentrated in poor communities and schools, are discriminated against in the diagnosis and treatment of early reading difficulties, and therefore never even get a foothold on the ladder to academic success.

The public and most educators are unaware of this added layer of discrimination on the basis of IQ and family background. As this report has shown, the lower the IQ, the later the diagnosis and treatment of early reading difficulties under special education laws that base eligibility for additional instruction on a significant discrepancy between intelligence and achievement. This practice goes hand in hand with the popular perception, shared by most educators, that learning disorders including dyslexia mainly afflict "bright" children. The net result is to reinforce the low expectations for children from low-income families and neighborhoods. Yet reading scientists have shown that early reading difficulties are preventable and remediable in children regardless of IQ (above the level of retardation) and other socioeconomic risks.

Educators, political officials and the public must recognize and uproot this hidden discrimination. Steps such as those recommended in this report for Baltimore City public schools must be taken by states and local districts across the country. But, as with other fundamental civil rights of poor and minority citizens, the federal government should guarantee opportunity and enforcement. Reading scientists and U.S. Department of Education officials are pointing the way. The fragmented, incomplete mandates found in special education, Title I and other federal laws including the No Child Left Behind Act should be replaced by a unitary entitlement to adequate early identification and intervention. Under a unitary entitlement, early diagnosis and treatment would be based solely on how students respond to early interventions, regardless of whether non-responders are technically eligible for special education services. And the federal government should pay a much larger share of the bill.[71]

But policy changes and more money are not the only needs. A research-inspired truce must be declared in the education wars over what is developmentally and instructionally appropriate for children in pre-kindergarten and the early grades. And teachers must receive much more training in how to teach reading in general and students with reading difficulties in particular.

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A unitary response-to-treatment model not tied to special education laws is the ultimate goal. In the interim, President George W. Bush's Commission on Excellence in Special Education is properly advocating the elimination of the discrepancy requirement for eligibility for the Specific Learning Disability (LD) classification, as reading scientists urge. Moreover, states such as Maryland should be encouraged to follow the lead of other states that provide more flexibility in the measurement of the discrepancy requirement and in the weight accorded it.[72] Another option for states and localities is to allow children from the age of three up to the age of nine to receive services under the less restrictive "Developmental Delay" special education classification.

Still, it must be acknowledged that expanding eligibility for children under special education laws poses stark dilemmas. If the discrepancy requirement for LD were eliminated, the special education rolls would swell, raising justifiable fears about funding, tracking and excessive procedural red tape. Yet if other avenues to early diagnosis and treatment don't get us there, expansion of special education is the lesser of the evils. If nothing else, the threat of a substantial expansion of LD eligibility will hasten the consideration of alternatives. Towards this end, advocates should bring legal action on behalf of children who do not receive timely, adequate identification and intervention in the early grades, and adequate IEPs thereafter.[73]

These national, state and local reforms won't come easily. Massive professional walls separate general education and special education. Beyond funding, there are still many lessons to be learned about the quantity and quality of instruction that will meet the diverse needs of struggling readers. The best early reading programs are necessary but not sufficient as students strive for higher-level comprehension.

But all these obstacles pale in contrast to the tens of thousands of children in Baltimore City and the millions across the country who will almost certainly remain left behind if their early reading difficulties are not diagnosed and treated. This invisible injustice cries out for a remedy. The nation should heed the call, and the Baltimore City school system should be in the front ranks of the struggle.

Endnotes

[1] Sally Shaywitz is quoted in Barbara Kantrowitz and Anne Underwood, "Dyslexia and the New Science of Reading," ***Newsweek***, Nov. 22, 1999, p. 74.

[2] Margaret J. Snowling, Dyslexia, (Malden, MA: Blackwell Publishers, 2001) (hereafter Snowling), p. 212. See also Sally E. Shaywitz, "Dyslexia," ***Scientific American***, Nov. 1996, pp. 98-104 (hereafter Shaywitz).

[3] G. Reid Lyon, "Toward a Definition of Dyslexia," ***Annals of Dyslexia***, 1995, pp. 3-27 (hereafter Lyon, Annals of Dyslexia), p. 4.

[4] Louise Spear-Swerling and Robert J. Sternberg, ***Off Track – When Poor Readers Become "Learning Disabled"*** (Boulder, Colo: Westview Press, 1996) (hereafter Spear-Swerling and Sternberg), p. 79. See also Marion Sanders, ***Understanding Dyslexia and the Reading Process, A Guide for Educators and Parents*** (Needham Heights, MA: Allyn and Bacon, 2001) (hereafter Sanders), pp. 44-45. For recent dispatches from the reading war fronts, see Tom Loveless, ed., ***The Great Curriculum Debate – How Should We Teach Reading and Math?"*** (Wash. DC: Brookings Institution Press, 2001)(hereafter Loveless).

[5] Catherine E. Snow, et al., ***Preventing Reading Difficulties in Young Children*** (Wash. DC: National Academy Press, 1998) (hereafter Preventing Reading Difficulties), p. 88.

[6] Reading difficulties account for 80 to 90 percent of learning disabilities. G. Reid Lyon, "Learning Disabilities and Early Intervention Strategies," Testimony before the Subcommittee on Education Reform, Committee on Education and the Workforce, U.S. House of Representatives, June 2, 2002. (http://edworkforce.house.gov/hearings/107th/edr/idea6602/lyon.htm) (hereafter Lyon Testimony), p. 5.

[7] Betsy Morris, "Overcoming Dyslexia," ***Fortune***, May 13, 2002.

[8] See footnote 1.

[9] Shaywitz 103. See also Spear-Swerling and Sternberg 78.

[10] Marion Sanders, a psychologist and reading expert, writes that two definitions of dyslexia are currently recognized within the profession — a narrow one, relating mainly to core deficits in phonological processing, and a broad one. The broad definition includes "difficulties with word identification, reading comprehension, associated difficulties in spelling and writing, and a wide range of difficulties with spoken language." She adds: "Another way to express the difference between the two definitions is that the narrow version deals with 'pure dyslexia' and the broad version deals with a wide gamut of language-based-difficulties, including pure dyslexia. As it now stands, the broad definition makes dyslexia synonymous with reading disability. The researchers in dyslexia formulated and prefer the narrow definition, while practitioners developed and are more likely to use the broader one." Sanders 2-3.

[11] Lyon, Annals of Dyslexia 19.

[12] Or better still, not labeled at all, but treated on a "non-categorical" basis according to individual needs as discussed later.

[13] For a lengthy analysis, see Lyon, Annals of Dyslexia.

[14] Further, the discrepancy must be "in one or more of the following areas: (i) Oral expression, (ii) Listening comprehension, (iii) Basic reading skills, (iv) Reading comprehension, (v) Written expression, (vi) Mathematics calculation, or (vii) Mathematics reasoning." The applicable provisions of the Code of Maryland Regulations are found and discussed in a technical assistance guide published by the Maryland State Department of Education, "Identifying Specific Learning Disabilities," June 2002 (hereafter Maryland Learning Disabilities Guide). See also the BCPSS Special Education Standard Operating Procedures Manual (SOPM), Working Draft Module 7, p. 6 and SOPM Appendix 1, Definitions, p. 12.

[15] Lyon, Annals of Dyslexia 4. The BCPSS Disability Definitions Training Module, at page 78, narrows the definition. It defines dyslexia as a "common reading disorder that is characterized by difficulty decoding words (single word identification) or encoding (spelling), a lack of phonemic awareness and rhymes, and poor ability to sequence syllables and letters in words." But as discussed later, this narrower definition is almost totally ignored in practice, especially in early diagnosis and treatment.

[16] Lyon, Annals of Dyslexia 4. While the Maryland Code of Regulations states that the severe discrepancy must not be "primarily" the result of "environmental, cultural or economic disadvantage," in practice, the word "primarily" is usually ignored.

[17] See footnote 27.

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[18] G. Reid Lyon et al., "Rethinking Learning Disabilities," in Chester E. Finn, Jr. et al., ***Rethinking Special Education for a New Century*** (The Thomas B. Fordham Foundation and the Progressive Policy Institute, May 2001) (hereafter Lyon, Fletcher et al.); President's Commission on Excellence in Special Education, "A New Era, Revitalizing Special Education for Children and their Families" (http://www.ed.gov/inits/commissionboards/whspecialeducation/reports/index/html (hereafter President's Commission). This research is integrally linked to national reports on the importance of teaching early reading skills. For example: Preventing Reading Difficulties; Report of the National Reading Panel, National Institute of Child Health and Human Development, NIH Pub. No. 00-4769, Apr. 2000 (hereafter National Reading Panel); Partnership for Reading, "Put Reading First: The Research Building Blocks for Teaching Children to Read," National Institute of Child Health and Human Development, Sept. 2001 (hereafter Put Reading First); see also Diane Ravitch, "It is Time to Stop the War," in Loveless, p. 225.

[19] See the reports cited in the prior footnote. See also Joseph K. Torgesen, "Individual Differences in Response to Early Interventions in Reading: The Lingering Problem of Treatment Resisters," ***Learning Disabilities Research & Practice***, Vol. 15, No. 1, 2000, pp. 55-64 (hereafter Torgesen, Individual Differences), p. 57; Lyon, Annals of Dyslexia 11; Spear-Swerling and Sternberg; Diane McGuiness, ***Why Our Children Can't Read*** (NY: The Free Press, 1997) (hereafter McGuiness); Regina Cicci, ***What's Wrong With Me? – Learning Disabilities at Home and School*** (Baltimore: York Press, 1995). Lyon points out that phonological processing encompasses not just phonological awareness but "phonological recoding in lexical access" (rapid retrieval of names and colors) and "phonetic recoding in working memory" (digit span, word span, and sentence repetition tasks). But phonological awareness is central: Of the "three major phonological skills, it is phonological awareness that appears to be the most deficient linguistic skill in disabled readers." Lyon, Annals of Dyslexia 10. At the same time, there appears to be growing attention to the "double deficit hypothesis" in which naming speed is regarded as a "second core-deficit." See, for example, two articles in the ***Annals of Dyslexia***, Vol. 49, 1999: Maryanne Wolf, "What Time May Tell: Towards a New Conceptualization of Developmental Dyslexia," pp. 3-28, and Martha B. Denckla and Laurie E. Cutting, "History and Significance of Rapid Automatized Naming, " pp. 29-42. See also Shaywitz 101, 104. Lyon notes the possibility that future research will reveal additional linguistic deficits that contribute to dyslexia. Lyon, Annals of Dyslexia 11-12, 19.

[20] Put Reading First 3.

[21] Shaywitz explains: "In dyslexia, an inefficient phonological model produces [sound] representations that are less clear and hence more difficult to bring to awareness. [This deficit] impairs decoding, preventing word identification. This basic deficit in what is essentially a lower-order linguistic function blocks access to higher-order linguistic processes and to gaining meaning from text. Thus, although the language processes involved in comprehension and meaning are intact, they cannot be called into play, because they can be accessed only after a word has been identified." Shaywitz 100.

[22] Preventing Reading Difficulties 54.

[23] M. Suzanne Donovan and Christopher T. Cross, eds., ***Minority Students in Special and Gifted Education*** (a report of the National Research Council Committee on Minority Representation in Special Education, Wash. DC: National Academy Press, 2002 (hereafter Minority Students), Ch. 8; President's Commission 24; Lyon, Annals of Dyslexia 15; Orton Dyslexia Society (now the International Dyslexia Association), a position paper "Informed Instruction for Reading Success: Foundations for Teacher Preparation," May, 1997, p. 6. See also Spear- Swerling and Sternberg 238.

[24] Joseph K. Torgesen, "Catch Them Before They Fall," ***American Educator***, Spring/Summer 1998, pp. 32-39 (hereafter Torgesen, American Educator), at p. 34. Spear-Swerling and Sternberg note that "garden-variety" poor readers ("those with a somewhat depressed IQ score that is commensurate with their low achievement in reading") and children with reading disabilities are hard to differentiate. They "appear similar with regard to specific cognitive abilities related to reading, especially word recognition. Both groups also seem to have a core of phonological deficits." Spear-Swerling and Sternberg 5. See also: "Specific Learning Disabilities: Finding Common Ground," a report by 10 organizations participating in the Learning Disabilities Roundtable, U.S. Department of Education Office of Special Education Programs, Wash. DC, July 25, 2002 (hereafter Finding Common Ground); President Commission 24; McGuiness 122; Snowling 192-194.

[25] Preventing Reading Difficulties 268. See also Daniel J. Reschly, "Utility of Individual Ability Measures and Public Policy Choices for the 21st Century," *School Psychology Review*, Vol. 26, No. 2, 1997, pp. 234-241, at p. 236.

[26] Maryland State Department of Education, "Maryland Special Education/Early Intervention Services Census Data & Related Tables," Dec. 1, 2001 (hereafter MSDE Census Data).

[27] See generally: Minority Students 286; President's Commission 24; Preventing Reading Difficulties 268; Lyon, Fletcher et al. 24-27; Torgesen, Individual Differences 57.

[28] Low IQ in kindergarten, for example, is associated with future reading difficulties. Preventing Reading Difficulties 107, 116. Snowling finds, at p. 213, "about 16 per cent of the variance in reading is accounted for by IQ, and language processes tapped by verbal IQ measures, particularly vocabulary, are crucial for reading comprehension." See also Shaywitz 101.

[29] Preventing Reading Difficulties 91, 93. See also Lyon, Annals of Dyslexia 17 and Sanders 48.

[30] Sanders 48-51 (15% have mild problems, 5% have severe problems); Shaywitz 100; Frank R. Vellutino and Donna M. Scanlon, "Emergent Literacy Skills, Early Instruction, and Individual Differences as Determinants of Difficulties in Learning to Read: The Case for Early Intervention," in Susan B. Newman and David K. Dickinson, eds., *Handbook of Early Literacy Research* (NY: Guilford Press, 2001) (hereafter Vellutino and Scanlon), p. 295.

[31] Sanders, at p. 50, cites an article written by Lyon to the effect that "only about 50 percent [of all students] can be expected to learn relatively easily with formal instruction regardless of whether or not phonics is taught directly." See also Torgesen, Individual Differences 61; Sanders 5.

[32] Torgesen, Individual Differences 61. See also Torgesen, American Educator 34: the non-responders to treatment are "a core of disabled readers in the population for whom we have not yet solved the reading puzzle." A full discussion of the causes of learning disabilities, including dyslexia, is beyond the scope of this paper. Briefly noted, most researchers attribute reading difficulties along the continuum to complex interactions among intrinsic (biology and heritability) and extrinsic (family environment and school instruction) factors. See generally Spear-Swerling and Sternberg, Ch. 8; Snowling 212; Sanders 55; Vellutino et al., "Cognitive Profiles of Difficult-to-Remediate and Readily Remediated Poor Readers," *Journal of Educational Psychology*, Vol. 88, No. 4, 1996, pp. 601-638, at p. 602. On biological origins, Shaywitz is prominent: see Shaywitz and a recent newspaper article (Quynh-Giang Tran, "Gene flaw causes dyslexia, researchers say," Boston Globe, July 16, 2002) describing the latest findings. See also Spear-Swerling and Sternberg 52; McGuiness 118; Preventing Reading Difficulties 119; Lyon, Annals of Dyslexia 4-5. On environmental family roots, see generally Preventing Reading Difficulties 317, 119; Spear-Swerling and Sternberg 243. In Baltimore and other large urban centers, lead poisoning could be characterized as both an "intrinsic" and "extrinsic" cause of reading difficulties, and several BCPSS practitioners noted in interviews the impact of untreated ear infections on phonological awareness.

[33] Preventing Reading Difficulties 91. See also Sanders xii.

[34] Sanders at p. 171 cites a *New York Times* editorial in 1997 stating that "according to National Institutes of Health researchers, 'fewer than 10 percent of teachers actually know how to teach reading to children who don't get it automatically.'" See generally: President's Commission 54: Lyon Testimony 3; Louisa C. Moats, *Teaching Reading is Rocket Science* (Wash. DC: American Federation of Teachers, 1999); Barbara A. Wasik et al., "Educating At-Risk Preschool and Kindergarten Children," in Sam Stringfield and Deborah Land, eds., *Educating at-risk students* (Vol. 101, No. 2) (Chicago: National Society for the Study of Education, 2002), p. 103.

[35] Preventing Reading Difficulties 268; Terry Salinger, "Assessing the Literacy of Young Children: The Case for Multiple Forms of Evidence," in Susan B. Neuman and David K. Dickinson, ed., *Handbook of Early Literacy Research* (NY: Guilford Press, 2001), p. 391; Sanders 53, 143.

[36] Mike Bowler, "Exploring the science, sociology of learning," *Baltimore Sun*, Aug. 5, 2001. The literature on early childhood programs is immense. See, for example: Grover J. Whitehurst, "Remarks at the While House Conference on Preschool Cognitive Development," Georgetown University, July 26, 200: Preventing Reading Difficulties; Barbara T. Bowman, et al., eds., *Eager to Learn – Educating Our Preschoolers* (Wash. DC: National Academy Press, 2001; "Building Blocks for Success, State Efforts in Early-Childhood Education, Quality Counts 2002," *Education Week*, Jan. 10, 2002. Two important policy issues involve the nationwide battle over more academic readiness content in Head Start programs, and the movement in several states towards expanding public programs, some connected to schools, for three year olds. A promising initiative is underway in

Maryland where 13 "Judy Centers" – based in or affiliated with local elementary schools – provide a comprehensive array of physical, social, emotional, cognitive and linguistic services to children from birth through age six, as well as support services for families. Maryland State Department of Education News Release, http://www.msde.state.md.us/pressreleases/2001/November/2001_11306.htm Two of the Judy Centers are in Baltimore City.

[37] See, for example: Preventing Reading Difficulties; President's Commission 22, Lyon, Fletcher et al. 271; Frank Gresham, "Responsiveness to Intervention: An Alternative Approach to the Identification of Learning Disabilities," paper presented at the Learning Disabilities Summit, Wash. DC, Aug. 27 and 28, 2001; Finding Common Ground. For a preliminary inquiry into the basic issues, see Maryland State Department of Education, Task Force Report, "Educational Practices for Students at Risk for, or Identified With, Reading and Writing Disabilities," March 2002

[38] Minority Students 292; Preventing Reading Difficulties 318.

[39] Barbara Kantrowitz and Pat Wingert, "The Right Way to Read," *Newsweek*, Apr. 29, 2002, p. 62.

[40] Jacques Steinberg, "For Head Start Children, Their Turn at Testing," *New York Times*, Dec. 4, 2002.

[41] See, for example: Preventing Reading Difficulties 133; Torgesen, American Educator 35; Vellutino and Scanlon 318.

[42] Preventing Reading Difficulties 133.

[43] G. Reid Lyon, "Learning To Read," *Their World*, 1997/1998, p. 22.

[44] A wide variety of screening and assessment models are available. See, for example, Maryland Learning Disabilities Guide. Screening should also address health and family risk factors. Torgesen points out: "The goal is to describe procedures that will allow educators to identify children who need extra help in reading before they experience serious failure and to monitor the early development of reading skill to identify children who may require extra help as reading instruction proceeds through elementary school." Torgesen, American Educator 32.

[45] For general background on the role of problem-solving teams, see several chapters in Daniel J. Reschly et al., eds., *Special Education in Transition – Functional Assessment and Noncategorical Programming* (Longmont, Col: Sopris West, 1999): Jim Ysseldyke and Doug Marston, "Origins of Categorical Special Education Services in Schools and a Rationale for Changing Them; David P. Prasse and Judy Schrag, "Providing Noncategorical, Functional, Classroom-Based Supports for Students With Disabilities: Legal Parameters;" W. David Tilly III et al., "Disability Determination in Problem Solving Systems: Conceptual Foundations and Critical Components." See also Edward J. Kame'enui et al., "Schools as Host Environments: Toward a Schoolwide Reading Improvement Model," *Annals of Dyslexia*, Vol. 50, 2000, 43-44. Leading models are found in Iowa, Minneapolis, Pennsylvania and in the Baltimore City schools. The BCPSS Student Support Teams Training Module (2001) is instructive.

[46] An informative analysis is found in Martin J. Ikeda and Jeri K. Gustafson, Research Report No. 2002-01, "Heartland AEA 11's Problem Solving Process," Heartland Area Education Agency 11, Johnston, Iowa (2002).

[47] Torgesen states that children with phonological processing deficits "will benefit from the same approach to reading instruction as children with normal abilities in this area – structured, systematic and explicit." Torgesen, American Educator 34. See also Spear-Swerling and Steinberg 5.

[48] For example: National Reading Panel; Preventing Reading Difficulties; Michael D. Coyne et al., "Prevention and Intervention in Beginning Reading: Two Complex Systems," *Learning Disabilities Research & Practice*, Vol. 6, No. 2, 2001, pp. 62-73 (hereafter Coyne), p. 67; Torgesen et al., "Preventing Reading Failure in Young Children with Phonological Process Disabilities: Group and Individual Responses to Instruction," *Journal of Educational Psychology*, Vol. 91, No. 4, Dec. 1999, pp. 579-593 (hereafter Torgesen, Preventing Reading Failure). See also Torgesen, Individual Differences 58, 63. No attempt is made in this paper to review the early reading wars, but several early intervention studies compare instructional approaches: see, for example, Torgesen, Preventing Reading Failure and Barbara R. Foorman et al., "The Role of Instruction in Learning to Read: Preventing Reading Failure in At-Risk Children," *Journal of Education Psychology*, Vol. 90, No. 1, 1998, pp. 37-55. For an excellent review of basic components of quality pre-kindergarten and kindergarten programs, see Wasik.

[49] Five leading studies were reviewed in 2000 in Torgesen, Individual Differences. See also Minority Students, Ch. 9. A longer list of studies conducted primarily to explore treatment of "unresponsive" students is found at Douglas Fuchs et al., "Identifying Children at Risk for Reading Failure: Curriculum-Based Measurement and the Dual Discrepancy Approach", (undated) care of Douglas Fuchs, Vanderbilt University. Also see early results from pilot projects in Florida (Lyon Testimony 8) and Oregon (Simmons). The Haan Foundation is in the process of developing a large scale national project to compare reading programs. The quest for best practices should also pick up steam from the Early Reading First and Early Reading provisions of the federal No Child Left Behind Act, including the mandates for research-based programs, and a series of studies funded by the U.S. Department of Education. The DOE recently awarded large multi-year grants to nine university centers established to study interventions. DOE press release Oct. 5, 2001 (www.ed.gov/PressReleases/10-001/10052001i.html). Based on communications with officials at the centers, the University of Oregon (Center for Improving Reading Competence Using Intensive Treatments Schoolwide), University of Texas (Preventing Reading Difficulties: A Three-Tiered Intervention Model) and Vanderbilt University (Center for Research on Learning Disabilities) appear especially poised to shed light in the future on the issues discussed in this paper.

[50] Torgesen, Individual Differences 63. See also Vellutino and Scanlon 317. The literature does not provide consistent guidelines for drawing the line between small group instruction and tutoring, nor a clear picture of their relative effectiveness. Small groups, however, usually entail breaking down a whole class into flexible groups and/or pull-out or pull-aside groups of low achievers. Small group size varies. Tutoring usually means one tutor to one-three students, usually outside of the reading/language arts block, and often after-school. Tutors range from professional teachers to nonprofessional aides and volunteers who may or may not be well trained.

[51] Simmons 22.

[52] Snowling, at p. 318, points out that few multi-sensory approaches have been properly evaluated: "Although they may work, it is important to show that they make a significant difference over and above that which could be made by simply giving the child more attention." Private schools in the Baltimore region for children with "dyslexia" employ Orton-Gillingham-like instructional methods. But at the same time, they have extremely small class size and intensive small group and tutoring supplemental instruction. Therefore, in examining their apparent success with many children with reading difficulties, it is not easy to separate the impact of the Orton-Gillingham methods from the impact of the intensity and duration of the core and supplemental instruction. Many students at these private schools are also tutored outside of school at their parents' additional expense.

[53] Sanders 4.

[54] The student promotion policy may be the most comprehensive and "toughest" in the nation, and, though flawed in some respects, has generally contributed to academic progress. Kalman R. Hettleman, "Too much retention, too little intervention," op-ed, ***Baltimore Sun***, Sept. 5, 2002.

[55] Erika Niedowski, "City schools' test scores climb," ***Baltimore Sun***, June 25, 2002.

[56] Baltimore City Public School System, "Report of the Reading By Nine Task Force," May 1, 2001. See also Kalman R. Hettleman, Statement to the Baltimore City Board of School Commissioners, June 27, 2002, "BCPSS' Commitment to Early Literacy is Lagging," and op-ed in the ***Baltimore Sun***, "Tests show kids can't do without 'Reading by 9,'" June 28, 2002.

[57] In pre-kindergarten, the WSS language and literacy indicators include "Demonstrates beginning phonemic awareness," as well as other indicators of vocabulary and language, concepts about print and knowing "letters, sounds, and how they form words." In kindergarten, the indicators include "Demonstrates phonological awareness" (spelled out in some detail) as well as other indicators of vocabulary and language, "increased fluency and complexity in orally expressing ideas," and print awareness. For each indicator, the rating scale is "Needs Development," "In Process" or "Proficient." Indicators also cover personal and social development, mathematical thinking, scientific thinking, social studies, the arts and physical development and health.

[58] The state mandates neither in pre-kindergarten.

[59] Baltimore City Public Schools, Early Identification and Intervention (EIIP) Manual, Fall 2000.

[60] Information about SSTs was generally gleaned in the author's interviews reported in Kalman R. Hettleman, "Still Getting It Wrong: The Continuing Failure of Special Education in Baltimore City Public Schools," Abell Foundation, Balto. MD, 2002 (hereafter "Still Getting It Wrong"). A some-

what different model being piloted – Instructional Consultation Teams – is also promising, though again limited by sparse resources.

[61] MSDE Census Data. Some students receive special education assistance for early reading difficulties through Speech and Language services. It is also possible but unlikely that some children ages 3-5 with severe emergent literacy problems may be found eligible under the Developmental Delay disability category.

[62] Interviews by the author. No data is kept of students whose disorder is described as "dyslexia," but the number is minimal at best.

[63] Some of these steps overlap with the system-wide interventions previously recommended.

[64] Also, wider use of the "developmental delay" classification under federal and state special education laws should be considered.

[65] See footnote 49.

[66] Torgesen, Individual Differences 61.

[67] The core programs in BCPSS require continuous improvement but they appear to meet most of the tests prescribed for system-wide and even school-level decisions under the SCRIM model in Oregon. Coyne; Simmons. At the same time, the line between focusing on core reading programs compared to individual interventions is difficult to draw, for example: professional development for classroom teachers; the division of responsibility between classroom teachers and reading specialists; and group instruction practices in both the regular classroom program and supplemental instruction.

[68] George Farkas and L. Shane Hall, "Can Title I Attain Its Goal?" in Diane Ravitch, ed., *Brookings Papers on Education Policy 2000* (Wash. DC: Brookings 2000), p. 65.

[69] The reading specialist might also be the on-site coordinator of the project. In addition to the reading specialist, speech and language services are likely to be of especial importance in the early grades. The relative roles of reading specialists and speech and language pathologists may itself be an issue since they appear sometimes to overlap in the diagnosis and treatment of early reading difficulties.

[70] A guesstimate of the costs of the project might be $4-5,000 per child per year, with most of the cost for one reading specialist for each 20 children.

[71] See Kalman R. Hettleman, "The Time Has Come: A Federal Guarantee of Adequate Educational Opportunity," in *Passing the Test – The National Interest in Good Schools for All*, Center for National Policy, Wash. DC, 2000. Maryland's school finance reform legislation, enacted last year, is a national model, but almost all states trail far behind.

[72] Judith A. Schrag, "Discrepancy Approaches for Identifying Learning Disabilities," National Association of State Directors of Special Education, Oct. 2000.

[73] A case could be made for expensive, intensive remedial IEP services similar to those provided by high price private schools for children with "dyslexia." Such legal action would be far more beneficial than the endless special education litigation, in Baltimore City and elsewhere, over procedural compliance. See Still Getting It Wrong. See also Jonathan D. Rockoff, "Balto. Co. schools named in complaint," *Baltimore Sun*, Sept. 25, 2002.

About the Author

Kalman R. Hettleman is an independent education analyst and advocate in Baltimore, Maryland with extensive experience at the intersection of public school policy, program administration and politics.

He is a former member of the Baltimore City school board, executive assistant and education aide to two mayors of Baltimore City, and executive director of RAISE, Inc., a demonstration project designed to reduce drop-out rates among inner city Baltimore students.

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